

# Sandia Decon Formulation for Mitigation and Decontamination of Chemical and Biological Warfare Agents

## Overview

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**Sandia National Laboratories**

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## Technology Need

A complete national program for protection against the chemical and biological warfare (CBW) threat must include elements for rapid response to such a threat. In the event of a domestic CBW attack, technologies to quickly decontaminate the area are necessary for two main reasons. First, the initial responders to the scene must be able to quickly decontaminate the area to a safe level so that casualties can be treated and evacuated. Second, a rapid, safe, and complete restoration of the affected facilities is necessary so that they can be readied for re-use in a timely manner without loss of critical and expensive equipment. Sandia National Laboratories (SNL) has responded to this national initiative to combat the domestic CBW threat by developing an aqueous decon formulation.

## Project Description

SNL has developed a nontoxic, noncorrosive aqueous formulation—Sandia Decon Formulation—for the rapid mitigation and decontamination of CBW agents. Sandia Decon Formulation can be deployed as a foam, liquid spray, or fog. Potentially, the formulation can be used by first responders to the scene of a domestic CBW attack and by personnel assigned to restoration of an affected facility after an attack. Experimental results on chemical and biological (CB) simulants and live CB agents indicate that the formulation works quickly, is effective against both chemical and biological agents, and does not generate toxic byproducts (see also Sandia Decon Formulation Test Results fact sheet). The U.S. military has also expressed considerable interest in the use of Sandia Decon Formulation based on a favorable test results and ease of logistical factors such as storage and deployment.

## Variety of Deployment Methods

The formulation can be deployed with various devices, depending on whether it is used as a foam, liquid spray, or fog. For foams, depending on the volume of use, Sandia Decon Formulation has been successfully deployed by means of small handheld devices, similar to fire extinguishers, and in large-scale foam-generating devices (Figure 1). The formulation as liquid spray can be disseminated by means of commercially available paint sprayers. Commercially available cold foggers work well when deploying the formulation as fog.



**Figure 1: Large-scale foam deployment**

## Significant Events

The Sandia Decon Formulation was on hand for use during recent high-profile events such as the 2000 Democratic National Convention in Los Angeles, CA, the 3rd Presidential Debate in St. Louis, MO (October 2000), and the 2002 Winter Olympics in Salt Lake City, UT.

The formulation was successfully deployed to decontaminate anthrax in Congressional office buildings in Washington, DC, and in commercial office buildings in New York City in October and November, 2001.

## Advantages

- Decontaminates and mitigates both chemical and biological weapons agents
- General disinfectant for bacterial spores, vegetative cells, and viruses
- Works quickly
- Can be deployed as foam, liquid, or fog
- Does not produce toxic byproducts
- Environmentally friendly
- Easy cleanup

## Patent Pending

Sandia National Laboratories has applied for a patent for the technology. The U.S. Government retains rights to the technology for U.S. Government use. The U.S. Government has granted SNL the right to license and commercialize the technology.

## Commercial Partners

### EnviroFoam

#### Technologies, Inc.

2903 Wall Triana Hwy  
Huntsville, AL 35824  
toll free: (800) 542-4665  
phone: (256) 319-0137  
fax: (256) 461-8136

### Modec, Inc.

4725 Oakland Street  
Denver, CO 80239  
toll free: (800) 967-7887  
phone: (303) 373-2696  
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### Web site:

<http://www.sandia.gov/SandiaDecon/>

The U.S. Department of Energy under the Chemical and Biological National Security Program (CBNP) sponsors this project.